



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/667,515	09/23/2003	Dae-Ho Choo	6192.0261.D1	1451

7590

06/07/2005

McGuire Woods  
Suite 1800  
1750 Tysons Boulevard  
McLean, VA 22102-4215

EXAMINER

BECK, DAVID THOMAS

ART UNIT

PAPER NUMBER

1732

DATE MAILED: 06/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/667,515	<b>Applicant(s)</b> CHOO ET AL.	
	<b>Examiner</b> David T. Beck	<b>Art Unit</b> 1732	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 September 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 8-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 8-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☒ All    b) ☐ Some \*    c) ☐ None of:  
         1. ☐ Certified copies of the priority documents have been received.  
         2. ☒ Certified copies of the priority documents have been received in Application No. 10/150,971.  
         3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
     \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>1/27/05</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Double Patenting*

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 8, 12 and 13 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 11 and 14 of U.S. Patent No. 6,541,730 in view of Stevens (5,622,540).

With regard to claims 8 and 13, claim 11 of the '730 patent teaches an apparatus for cutting a non-metallic substrate, comprising: a first laser beam generating means that generates a first laser beam for breaking molecular bonds of the non-metallic substrate material so as to heat a cutting path formed on the non-metallic substrate and to form a scribe line having a crack to a desired depth; and a second laser beam generating means that generates a second laser beam for propagating the crack along a scanning path of the first laser beam in a depth direction of the substrate, but also teaches using a cooler that applies a cooling fluid. Stevens teaches a cooler that applies a cooling fluid to propagate a crack after grooving a substrate with a laser

(column 1, lines 40-41). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include a cooler to apply a cooling fluid. The motivation to do so would have been to improve the cutting operation (Stevens, column 1, lines 40-41).

With regard to claim 12, claim 14 of the '730 patent teaches that the second laser beam is wider than the first.

### ***Claim Rejections***

#### ***Claim Rejections - 35 USC § 102(b)***

3. Claims 8, 9, 11, and 13 are rejected under 35 U.S.C. 102(b) as anticipated by applicant's own admissions found in the specification, page 5, lines 1-18.

With regard to claim 8, applicant describes a conventional laser cutting apparatus (specification, page 4, lines 18-19) that includes an apparatus for cutting a non-metallic substrate, comprising: a first laser beam generating means that generates a first laser beam for breaking molecular bonds of the non-metallic substrate material so as to heat a cutting path formed on the non-metallic substrate and to form a scribe line having a crack to a desired depth (specification, page 5, lines 1-4); and a second laser beam generating means that generates a second laser beam for propagating the crack along a scanning path of the first laser beam in a depth direction of the substrate (specification, page 5, lines 13-18). It is irrelevant that the specification also describes using a cooling fluid because claim 8 uses the term "comprising" which is open ended and does not preclude the use of a cooling fluid.

Art Unit: 1732

With regard to claim 9, applicant describes a first laser beam has a wavelength having an absorptivity of 95% or more with respect to the non-metallic substrate (specification, page 5, lines 1-4)

With regard to claim 11, applicant describes a second laser beam that is a CO.sub.2 laser beam (specification, page 5, lines 13-14).

With regard to claim 13, applicant describes a second laser beam that is directly scanned onto the scribe line (specification, page 5, lines 13-14).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's own admission in view of Kitajima et al (6,320,158).

With regard to claim 10, the applicant's specification teaches that the invention of claim 9 is conventional, but does not teach that the first laser beam is a fourth harmonics YAG laser beam having a wavelength of 266 nm. Kitajima et al teach using a laser beam that is a fourth harmonics YAG laser beam having a wavelength of 266 nm (column 9, lines 4-21) to punch holes through a glass plate. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use a a laser beam that is a fourth harmonics YAG laser beam having a wavelength of 266 nm in the conventional laser apparatus taught by the applicant. The motivation to do so

would have been to use a laser that would be more than 90 percent absorbed by the glass to facilitate cutting (Kitajima et al, column 9, lines 4-6).

6. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's own admission in view of Boyle (6,841,482).

With regard to claim 12, the applicant's specification teaches that the invention of claim 8 is conventional, but does not teach that the first laser beam has a width less than that of the second laser beam. Boyle teaches cutting a wafer using a first laser beam has a width less than that of a second laser beam (column 4, lines 41-49). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use a first laser beam has a width less than that of a second laser beam in the conventional apparatus taught by the applicant. The motivation to do so would have been to use a cheaper, more stable laser to make the initial score line, and a more expensive UV laser to apply an excellent finish quality to the edges (Boyle, column 4, lines 18-29).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David T. Beck whose telephone number is 571-272-2942. The examiner can normally be reached on Monday - Friday, 8AM - 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Colaianni can be reached on 517-272-1196. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 1732

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DTB  
May 25, 2005

DTB

  
**MICHAEL P. COLAIANNI**  
**SUPERVISORY PATENT EXAMINER**